

Botany/Ethnobotany

Limu Kala is a brown alga belonging to the Fucales order. It's endemic to Hawai'i & is designated as the official state limu! Like many other *Sargassums*, they have these circular, oxygen airbladders called pneumatocysts that keeps them buoyant! Reproductive receptacle structures can be found along the axils (as seen in the image above).

- It's a sacred limu used in a hana ho'ohanohano. Each person involved in a dispute would get a piece of Limu Kala, prays forgiveness, & then eats the limu at the end of the ceremony.
- A kahu (priest) can purify a person, object or a place with Limu Kala.
- Limu Kala would be mixed with Limu Līpoa (*Dictyopteris spp.*) & given to little nā keiki the strength to play, to study, & to drive away sicknesses.

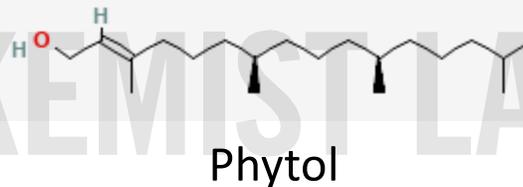
Alga of the Month

By Kyle Roath, Alkermist Labs
 \\NAS\station15\Plant of the Month\



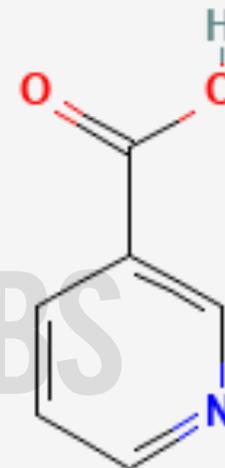
Limu Kala

Sargassum aquifolium
 (Formerly *Sargassum echinocarpum*)



Pharmacology/Chemistry

Firdaus et al. (2025) performed a study involving hypercholesterolemic rats being fed Limu Kala juice (1x-3x daily for 120 days). The result included a significant reduction in triglycerides & total cholesterol (among many other assays). Niacin & other bioactive compounds were largely responsible. The results suggests that Limu Kala juice could be a potential use as an antihypercholesterolemic agent. In another study, Elsamiae et al. (2025) found that Limu Kala aqueous & pigment extracts showed significant in vitro cytotoxic activity against lung & colon cancer cell lines. Phytol & other bioactive compounds were largely responsible. The results suggest that Limu Kala aqueous & pigment extracts could potentially be used against cancers.



References

Botany Section:

<https://dlnr.hawaii.gov/blog/2022/09/24/nr22-145/>

<https://manoa.hawaii.edu/mop/2020/02/05/algae-of-the-month-january-february-2020/>

<https://dlnr.hawaii.gov/holomua/algae-in-coral-reefs/>

<https://wehe.hilo.hawaii.edu/?q=Limu+Kala+>

<https://www.waikikiaquarium.org/experience/plants-seaweeds/seaweeds/limu-lipoa/>

Imaged: https://www.algaebase.org/search/species/detail/?species_id=20503

Pharmacology/Chemistry Section:

<https://pmc.ncbi.nlm.nih.gov/articles/PMC12237561/>

<https://www.nature.com/articles/s41598-025-22987-z>

Image: <https://pubchem.ncbi.nlm.nih.gov/compound/Nicotinic-Acid>

Image: <https://pubchem.ncbi.nlm.nih.gov/compound/Phytol#section=2D-Structure>